

REMARKS

This Amendment and Response responds to the “Response To Arguments” in the Final Action dated May 16, 2005, and further responds to the rejections in paragraphs 4, 6-9, which essentially repeat the rejections made in the previous Action.

Claims 1, 4, 5, 9, 13, 18, and 25 have been amended to set forth with more clarity the aspects of embodiments of the present invention. Independent claim 1 now specifically sets forth the types of state management to which the entity bean objects may be classified. Further, those entity bean objects are classified “according to” one such type (see Fig. 3, for example, at 308, 310, etc.) Also, the providing state management operation now references a state object corresponding to the respective entity bean object. That providing state management is clarified by reference to replicating each one of the plurality of state objects in a state server, the state server for a particular state object being dedicated to a state management type that corresponds to the state management type that is associated with the particular state object. Such dedication is based, for example, on Fig. 3 which shows the dedicated state servers 212 and 214, one for the exemplary disk and one for memory. Claim 1 thus now provides the “different types of state servers” referenced as being missing (Action page 2, line 16).

Independent claim 9 has also been clarified by amendment to define the partitioning of individual entity bean objects of the Java application into state partitions, the partitioning being by state objects corresponding to the entity bean objects. Also, the classifying operation is now clearer in stating that each state management unit is a collection of the state objects corresponding to one particular state management type. In addition, a new operation makes it clear that there is replicating of each state management unit in one of a plurality of state servers according to the particular state management type that corresponds to the particular state objects classified in the state management unit.

Independent claim 18 has also been clarified by amendment to define the system for partitioning as including an application in which each of the plurality of entity bean objects comprises a state management type, and these types are specifically defined. Each state object is associated with a particular state management type, and is referenced to a corresponding entity bean object. The plurality of state management units classify the state objects, and a particular state object is now classified into a particular state management unit

based on the particular state management type of the corresponding entity bean object. Further, a state server is now said to be dedicated to each state management type. In answer to the note in the Final Action as to argued text missing the subject of the arguments, claim 18 now also defines the state management type identifying a policy for replication of a state object to a state server dedicated to a particular state management type and a policy for migration of a state object from one server process to another server process. The method concludes with a positive recitation of a replicated state manager configured to replicate a particular state management unit to the state server that is dedicated to the particular state management type of the particular state object that is classified into the particular state management unit to be replicated.

Consideration of the amended claims as being patentable over Nally and the other cited art is respectfully requested. As a preface, the references in Nally to storing version data are not concerned with the claimed replication of such data to which an importance has been attached. Thus, none is concerned with the claimed methods and apparatus which enable establishing levels of importance of replicating the version data for restorative purposes. These levels, for example, are by memory and disk state objects 314, and similar dedicated state servers 212 and 214, for example (Fig. 3).

In detail, Nally does not teach the claim 1 providing state management in which there is replicating of each one of the plurality of state objects in a state server, wherein the state server for a particular state object is dedicated to a particular state management type. For example, that claimed dedication relates to the state management type that is associated with the particular state object to be replicated. Further, Nally does not teach the claim 9 replicating each state management unit in one of a plurality of state servers according to the particular state management type that corresponds to the particular state objects classified in the state management unit. Additionally, Nally does not teach the claim 18 state server dedicated to each state management type, the state management type identifying the two noted policies (for replication and migration). Nally further fails to teach the claim 18 replicated state manager configured to replicate a particular state management unit to the state server that is dedicated to the particular state management type of the particular state object that is classified into the particular state management unit to be replicated.

As to claim 9, Nally does not teach the classifying operation, which states that each state management unit is a collection of the state objects corresponding to one particular state

management type. In addition, Nally fails to teach the new operation of replicating of each state management unit in one of a plurality of state servers according to the particular state management type that corresponds to the particular state objects classified in the state management unit.

As to claim 18, Nally does not describe the plurality of state management units that classify the state objects, nor the particular state object classified into a particular state management unit based on the particular state management type of the corresponding entity bean object. Again, in Nally no state server is dedicated to each state management type

In summary, the amended claims define beyond a mere recitation of different state management types, and relate specific state management types not only to separate state objects corresponding to a particular type, but to particular dedicated state servers to which the state objects, for example, are replicated.

In contrast, in Nally, the tracking of the versions 520, 521, etc., is by the version status data 530, which stores all of the state data for the one version of the EJB 500. The one version is 520, Fig. 5, with all version data for that version 520 in VSD 530. The description of tracking of the status of this one version (C13, L32-35; C14, L21-62) does not describe separation of the version status data 530 into the claimed different state objects, wherein each state object is associated with the state management type of the corresponding entity bean object (e.g., claim 1). This omitted disclosure does not matter in Nally because Nally does not teach the further claimed state server for a particular state object as being dedicated to a particular state management type. This lack of dedicated state servers is confirmed by Nally's general description at C13, L52-55 of "changes can be persisted to the data store" without any reference to a state server for a particular state object being dedicated to a particular state management type. Moreover, the references at C14, L21-61 to "synchronization to the persistent store" (C14, L33), for example, are devoid of any type of state management type, and devoid of a state server for a particular state object being dedicated to a particular state management type. Similarly, the reference at C15, L50-55 to "copied to the persistent store", for example, is again devoid of any type of state management type, and devoid of a state server for a particular state object being dedicated to a particular state management type.

Significantly, none of these references to the persistent store is concerned with the claimed replication of data, which is based on methods and apparatus that establish levels of importance of replicating data for restorative purposes. These levels, for example, are by memory and disk state objects 314, and similar dedicated state servers 212 and 214, for example (Fig. 3).

Further, it is respectfully submitted that the assertions of “inherency” as to the Nally disclosure are inapplicable to the claims, as amended. Reference is first made to page 3, lines 4-11 of the Final Action. The reasoning is that:

1. the EJB Object 510 tracks the different versions of the entity bean, and changes to the versions (lines 3-4);
2. the versions are individual entity bean objects (lines 4-5); and
3. the EJB Object 510 is a particular modular state management type (lines 5-6).

This “inherency” argument is that the tracking of those versions (entity bean objects), is an association and classification with the EJB Object, and hence with a particular modular state management type. In response, the EJB Object 510 is described first at C13, L17 in terms of the EJB500 being partitioned. One result of the partitioning is the EJB Object 510. However, no particular modular state management type is attributed to that EJB Object 510 (C13, line 17). Further, and critically, the partitioning separately makes a version (e.g., 520) as indicated in Fig. 5 by the separate lines to 510 and 520. The separate lines to 510 and 520 indicate that the EJB Object 510 is not “associated with” the partitioned version 520 or its subordinate status data 530, etc., which instead are separate from the EJB Object 510. Yet further, because no particular modular state management type is attributed to that EJB Object 510, the versions are not “classified” with the EJB Object 510. As a result, Nally’s EJB Object 510 is not equivalent to the claimed particular modular state management type, and Nally does not disclose particular modular state management types to which individual entity bean objects are classified.

Respectfully, the second inherency assertion at page 3, lines 12-18 is also inapplicable to the amended claims in view of the next-above remarks. As advanced further above, the Nally description of tracking of the status of one version (C13, L32-35) does not describe

separation of the version status data 530 into the claimed different state objects, wherein each state object is associated with the state management type of the corresponding entity bean object (e.g., claim 1). This omitted disclosure is unimportant in Nally because Nally does not teach the further claimed state server for a particular state object as being dedicated to that particular state management type. Note that this lack of dedicated state servers is confirmed by Nally's:

1. general description at C13, L52-55 of "changes can be persisted to the data store" without any reference to a state server for a particular state object being dedicated to a particular state management type;
2. references at C14, L21-61 to "synchronization to the persistent store" (C14, L33), for example, that are devoid of any type of state management type, and devoid of a state server for a particular state object being dedicated to a particular state management type; and
3. reference at C15, L50-55 to "copied to the persistent store", for example, that again is devoid of any type of state management type, and devoid of a state server for a particular state object being dedicated to a particular state management type.

Respectfully, the third inherency assertion at page 3, lines 12-18 also fails with respect to the present claims. State management in claim 1, for example, defines the state management type being one of a recoverable state or a non-recoverable state, the recoverable state being one of a memory replicated state management type or a disk replicated state management type. In contrast, Nally attributes to the version status 530 a new or old state (C14, L23+); or delete or modified, for example, and not the claimed type. Further, in state management as now claimed, the state server for a particular state object is dedicated to a state management type that corresponds to the state management type that is associated with the particular state object." As noted above, Nally has no such combination of defined states, state servers dedicated to such defined states, nor providing state management by replicating each one of the plurality of state objects in such a state server (claim 1, for example).

Consideration of the amended claims as being patentable over Chung is respectfully requested. Chung was cited to supplement the Nally disclosure, as describing a mechanism for recovery of states for entity bean objects. However, the cited C2, L6-11, and C2, L62-66,

and C4, L50-55, and C5, L53-60 fail to describe the presently claimed embodiments of the claimed invention. In detail, the C2 cites merely note possible states of a process (volatile and persistent), and are general as to restoring and recovery. The C4 cite is also general as to saving a process state, restoring the saved state for recovery after failure. Further, the C5 cite references storage of the volatile state from volatile memory to disk 100.

While these states are related to recovery, none of these references to states described the claimed replication of data, which is based on methods and apparatus which establish levels of importance of replicating data for restorative purposes. These levels, for example, are by memory and disk state objects 314, and similar dedicated state servers 212 and 214, for example (Fig. 3). In contrast, the various examples in Chung do not provide the claimed state server for a particular state object and dedicated to a particular state management type (claim 1), nor a state management unit as a collection of the state objects corresponding to one particular state management type, with replicating of each state management unit in one of a plurality of state servers according to the particular state management type that corresponds to the particular state objects classified in the state management unit (claim 9), nor the plurality of state management units that classify the state objects, with a particular state object classified into a particular state management unit based on the particular state management type of the corresponding entity bean object.

In Chung, the C9, L50+ operation of the library 150 and subroutine 154 save information, but without regard to importance, e.g., without reference to the claimed state server for a particular state object is dedicated to a particular state management type, nor particular state object classified into a particular state management unit based on the particular state management type of the corresponding entity bean object, for example. Similarly, the C12, L27+ description merely identifies protected variables, and does not specify use of any claimed state server for a particular state object being dedicated to a particular state management type, for example. Accordingly, the combination of Chung with Nally would not provide the above-noted aspects of the claimed embodiments of the present invention.

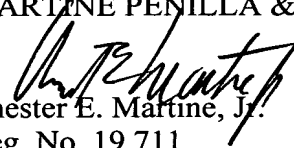
Additionally, Applicants respectfully submit that the Apte and the Savage references do not remedy the deficiencies as discussed regarding the Nally and Chung references. Consequently, Applicants respectfully submit that the cited prior art references, individually or in combination, do not disclose or suggest all of the features of the claimed inventions as is

required for a section 103 rejection. As a result, Applicants respectfully submit that the cited prior art references fail to make a prima facie case of obviousness for the present claims.

Applicants respectfully submit that all of the dependent claims are allowable for at least the same reasons as the independent claims are allowable. Consequently, Applicants respectfully request that the rejections not be applied to the present claims.

In view of the foregoing, Applicants respectfully request consideration of the pending claims, as amended herein, and submit that these claims are in condition for allowance. Accordingly, a notice of allowance is respectfully requested. In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at (408) 749-6900 ext. 6927. If any additional fees are due in connection with the filing of this paper, then the Commissioner is authorized to charge such fees to Deposit Account No. 50-0805 (Order No. SUNMP006).

Respectfully submitted,
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